Complete Summary

GUIDELINE TITLE

Prediction, prevention, and prognosis of preeclampsia. In: Diagnosis, evaluation and management of the hypertensive disorders of pregnancy.

BIBLIOGRAPHIC SOURCE(S)

Magee LA, Helewa M, Moutquin JM, von Dadelszen P, Hypertension Guideline Committee, Society of Obstetricians and Gynaecologists of Canada. Prediction, prevention, and prognosis of preeclampsia. In: Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. J Obstet Gynaecol Can 2008 Mar;30(3 Suppl 1):S16-23.

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Preeclampsia

GUIDELINE CATEGORY

Prevention
Risk Assessment
Screening

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Obstetrics and Gynecology

INTENDED USERS

Advanced Practice Nurses
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To summarize the quality of the evidence to date and provide a reasonable approach to the diagnosis, evaluation, and treatment of the hypertensive disorders of pregnancy (HDP)

TARGET POPULATION

Pregnant women at low or high risk of preeclampsia

INTERVENTIONS AND PRACTICES CONSIDERED

Risk Assessment

1. Predicting preeclampsia
    - Risk stratification
2. Maternal and fetal prognosis in preeclampsia
    - Serial surveillance of maternal well-being
    - Serial surveillance of fetal well-being
    - Monitoring for maternal and perinatal complications

Prevention

Women at Low Risk

1. Calcium supplementation
2. Abstention from alcohol
3. Exercise
4. Folate-containing multivitamin
5. Smoking cessation

Women at High Risk

1. Low-dose aspirin
2. Calcium supplementation
3. Abstention from alcohol
4. Periconceptual use of folate-containing multivitamin
5. Smoking cessation

MAJOR OUTCOMES CONSIDERED

- Incidence and prevalence of preeclampsia in women at low risk
- Incidence and prevalence of preeclampsia in women at increased risk
- Risk markers for preeclampsia

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The literature reviewed included the original hypertensive disorders of pregnancy (HDP) guidelines and their reference lists and an update from 1995. Each subgroup leader provided the Canadian Hypertension Society (CHS) with key words for a subgroup literature search of MEDLINE (1995–2005). Searches were subsequently updated by subgroup members in 2006. Articles were restricted to those published in French or English. The key words used are listed in the Appendix of the original guideline document. The concepts explored for pregnancy and hypertension were diagnosis, evaluation, classification, prediction (using clinical and laboratory markers), prevention, prognosis, treatment of hypertension, other treatments of the hypertensive disorders, general management issues (such as mode of delivery and anaesthetic considerations), and postpartum follow-up (for subsequent pregnancies and long-term health).

A focus was placed on consideration of randomized controlled trials (RCTs) for therapy and evaluation of substantive clinical outcomes (rather than surrogate markers such as laboratory values).

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Quality of Evidence Assessment*

I: Evidence obtained from at least one properly randomized controlled trial

II-1: Evidence from well-designed controlled trials without randomization

II-2: Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group

II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

*Adapted from the Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Canadian obstetricians and internists knowledgeable about hypertensive disorders of pregnancy (HDP) and guideline development participated in the project. Invitations to participate took into account geographical representation, previous involvement in developing HDP guidelines, ongoing interest and expertise in HDP, and membership in Canadian Hypertension Society (CHS) and/or Society of Obstetricians and Gynaecologists of Canada (SOGC).

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Classification of Recommendations*

A. There is good evidence to recommend the clinical preventive action

B. There is fair evidence to recommend the clinical preventive action

C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making

D. There is fair evidence to recommend against the clinical preventive action

E. There is good evidence to recommend against the clinical preventive action

I. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

*Adapted from the Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This guideline has been reviewed and approved by the Hypertension Guideline Committee and approved by the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada (SOGC).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions of the levels of evidence (I, II-1, II-2, II-3, and III) and grades of recommendations (A-E and I) are provided at the end of the "Major Recommendations" field.

Prediction, Prevention, and Prognosis of Preeclampsia

Predicting Preeclampsia

1. At booking for antenatal care, women with markers of increased risk for preeclampsia should be offered obstetric consultation. (**II-2B**)
2. Women at increased risk of preeclampsia should be considered for risk stratification involving a multivariable clinical and laboratory approach. (**II-2B**)

Preventing Preeclampsia and its Complications in Women at Low Risk

1. Calcium supplementation (of at least 1gram/day (g/d), orally) is recommended for women with low dietary intake of calcium (< 600 milligram (mg)/d). (**I-A**)
2. The following are recommended for other established beneficial effects in pregnancy: abstention from alcohol for prevention of fetal alcohol effects (**II-2E**), exercise for maintenance of fitness (**I-A**), periconceptual use of a folate-containing multivitamin for prevention of neural tube defects (**I-A**), and smoking cessation for prevention of low birthweight and preterm birth. (**I-E**)

3. The following may be useful: periconceptual use of a folate-containing multivitamin, (**I-B**) or exercise. (**II-2B**)
4. The following are **not** recommended for preeclampsia prevention, but may be useful for prevention of other pregnancy complications: prostaglandin precursors (**I- C**), or supplementation with magnesium (**I-C**), or zinc (**I-C**).
5. The following are **not** recommended: dietary salt restriction during pregnancy (**I-D**), calorie restriction during pregnancy for overweight women (**I-D**), low-dose aspirin (**I-E**), vitamins C and E (based on current evidence) (**I-E**), or thiazide diuretics (**I-E**).
6. There is insufficient evidence to make a recommendation about the following: a heart-healthy diet, (**II-2 I**) workload or stress reduction, (**II-2 I**) supplementation with iron with/without folate, (**I-I**) or pyridoxine. (**I-I**).

Preventing Preeclampsia and its Complications in Women at Increased Risk

1. Low-dose aspirin (**I-A**) and calcium supplementation (of at least 1 g/d) are recommended for women with low calcium intake (**I-A**), and the following are recommended for other established beneficial effects in pregnancy (as discussed for women at low risk of preeclampsia): abstention from alcohol (**II-2E**), periconceptual use of a folate-containing multivitamin (**I-A**), and smoking cessation (**I-E**).
2. Low-dose aspirin (75 to 100 mg/d) (**III-B**) should be administered at bedtime (**I-B**), starting pre-pregnancy or from diagnosis of pregnancy but before 16 weeks' gestation (**III-B**), and continuing until delivery (**I-A**).
3. The following may be useful: avoidance of inter-pregnancy weight gain (**II-2E**), increased rest at home in the third trimester (**I-C**), and reduction of workload or stress (**III-C**).
4. The following are **not** recommended for preeclampsia prevention but may be useful for prevention of other pregnancy complications: prostaglandin precursors (**I-C**) and magnesium supplementation (**I-C**).
5. The following are **not** recommended: calorie restriction in overweight women during pregnancy, (**I-D**) weight maintenance in obese women during pregnancy (**III-D**), antihypertensive therapy specifically to prevent preeclampsia (**I-D**), vitamins C and E (**I-E**).
6. There is insufficient evidence to make a recommendation about the usefulness of the following: the heart-healthy diet (**III-I**); exercise (**I-I**); heparin, even among women with thrombophilia and/or previous preeclampsia (based on current evidence) (**II-2 I**); selenium (**I-I**); garlic (**I-I**); zinc, (**III-I**), pyridoxine, (**III-I**) iron (with or without folate), (**III-I**) or multivitamins with/without micronutrients. (**III-I**)

Prognosis (Maternal and Fetal) in Preeclampsia

1. Serial surveillance of maternal well-being is recommended, both antenatally and post partum (**II-3B**).
2. The frequency of maternal surveillance should be at least once per week antenatally, and at least once in the first three days post partum (**III-C**).
3. Serial surveillance of fetal well-being is recommended (**II-2B**).
4. Antenatal fetal surveillance should include umbilical artery Doppler velocimetry (**I-A**).

5. Women who develop gestational hypertension with neither proteinuria nor adverse conditions before 34 weeks should be followed closely for maternal and perinatal complications (**II-2B**).

Definitions:

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Classification of Recommendations**

A. There is good evidence to recommend the clinical preventive action

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E. There is good evidence to recommend against the clinical preventive action

I. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

*The quality of evidence reported in these guidelines has been adapted from the Evaluation of Evidence criteria described in the Canadian Task Force on the Preventive Health Care.

**Recommendations included in these guidelines have been adapted from the Classification of Recommendations criteria described in the Canadian Task Force on the Preventive Health Care.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate prediction, prevention, and prognosis of preeclampsia

POTENTIAL HARMS

A dose of 100mg/day of aspirin may affect fetal prostacyclin synthesis.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This guideline reflects emerging clinical and scientific advances as of the date issued and are subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Local institutions can dictate amendments to these opinions. They should be well documented if modified at the local level.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Magee LA, Helewa M, Moutquin JM, von Dadelszen P, Hypertension Guideline Committee, Society of Obstetricians and Gynaecologists of Canada. Prediction, prevention, and prognosis of preeclampsia. In: Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. J Obstet Gynaecol Can 2008 Mar;30(3 Suppl 1):S16-23.

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2008 Mar

GUIDELINE DEVELOPER(S)

Society of Obstetricians and Gynaecologists of Canada - Medical Specialty Society

SOURCE(S) OF FUNDING

Society of Obstetricians and Gynaecologists of Canada

GUIDELINE COMMITTEE

Hypertension Guideline Committee

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Society of Obstetricians and Gynaecologists of Canada Web site.

Print copies: Available from the Society of Obstetricians and Gynaecologists of Canada, La société des obstétriciens et gynécologues du Canada (SOGC) 780 promenade Echo Drive Ottawa, ON K1S 5R7 (Canada); Phone: 1-800-561-2416

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on February 17, 2009. The information was verified by the guideline developer on March 13, 2009.

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